

Ontario's Water Conservation And Efficiency Goals, Objectives and Programs

In Accordance with The
Great Lakes-St. Lawrence River Basin
Sustainable Water Resources Agreement

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PIBS 8409e01

ONTARIO'S WATER CONSERVATION AND EFFICIENCY GOALS, OBJECTIVES AND PROGRAMS IN ACCORDANCE WITH THE GREAT LAKES-ST. LAWRENCE RIVER BASIN SUSTAINABLE WATER RESOURCES AGREEMENT

Introduction

In December 2005, Ontario Premier McGuinty, Québec Premier Charest, and the governors of the eight U.S. Great Lakes states (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin) signed the *Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement). This good-faith agreement committed the provinces and states that share the Great Lakes to adopt and implement measures to better protect and conserve the waters of the Great Lakes – St. Lawrence River Basin (Basin).

Among other things, each jurisdiction committed to developing and implementing state and provincial water conservation and efficiency goals, objectives and programs (mandatory or voluntary). In this document, Ontario sets out its goals, objectives and programs for water conservation and efficiency. Ontario's goals are identical to the goals in the Agreement. Ontario's objectives are consistent with the regional objectives for the Basin which were developed cooperatively by all jurisdictions and adopted in December 2007. These goals, objectives and programs are a significant step forward in implementing the province's commitments under the Agreement. The goals and objectives are broad in scope, aiming to enhance long-term, sustainable water-use practices and management; promote water conservation and efficiency; improve monitoring and data sharing amongst jurisdictions in the Great Lakes Basin; develop science and research and education and outreach to help advance our water conservation efforts. The province's existing water management and water conservation programs, including the Water Opportunities and Water Conservation Act, 2010, support achievement of the goals and objectives.

The province continues to take action to protect the Great Lakes. In June 2012, a draft Ontario Great Lakes Strategy was released which discusses the various ways the province would take action to protect and restore the Great Lakes. The draft Strategy would help to advance Great Lakes water quantity management and the fulfillment of Ontario's water conservation and efficiency goals and objectives.

The Ministries of the Environment and Natural Resources will work with water users and other ministries to meet these goals and objectives and implement programs.

The remainder of the document describes Ontario's water conservation and efficiency goals, objectives (Table 1) and programs (Appendices A and B).

On August 5, 2009, the Ministries of the Environment and Natural Resources posted a Proposal Notice on the Environmental Registry to seek public input on proposals for implementing key Ontario commitments under the Agreement. Among the proposals consulted on was the development of Ontario water conservation and efficiency goals and objectives, as committed to under the Agreement. Based on consultation and comments received, Ontario is adopting the Basin-wide water conservation goals and objectives.

Ontario's objectives are consistent with the regional objectives adopted for the Basin. They have been tailored for Ontario to reflect the direction in the Water Opportunities and Water Conservation Act, 2010. They have also been adapted to address stakeholder requests to emphasize the importance of taking ecological water needs into account in decision making, in keeping with the broader ecosystem protection and restoration goals of the Agreement.

GOALS (identical to the *Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement*)

1. Ensuring improvement of the waters and water dependent natural resources;
2. Protecting and restoring the hydrologic and ecosystem integrity of the Basin;
3. Retaining the quantity of surface water and groundwater in the Basin;
4. Ensuring sustainable use of waters of the Basin; and,
5. Promoting the efficiency of use and reducing losses and waste of water.

Table 1. Objectives (consistent with the Basin-wide Objectives)	
1. Guide programs toward long-term sustainable water use and management including taking ecosystem needs for water into account.	<ol style="list-style-type: none"> a. Use adaptive programs that are goal-based, accountable and measurable over time. b. Develop and implement programs openly and collaboratively, including with local stakeholders, Aboriginal people, governments and the public. c. Prepare and maintain long-term water demand forecasts. d. Conduct and improve multi-scale water budgets and water quantity risk assessments. e. Develop long-term strategies that incorporate water conservation and efficient water use and integrate them with other environmental management practices and considerations such as energy use, climate change, and the protection and restoration of hydrological and ecological integrity. f. Review and build on existing programs and planning efforts and consider other jurisdictions' practices and experiences.
2. Adopt and implement supply and demand management to promote efficient use and conservation of water resources.	<ol style="list-style-type: none"> a. Maximize water use efficiency and minimize waste of water. b. Promote appropriate innovative water, wastewater and stormwater technologies and services. c. Conserve and manage existing water supplies to prevent or delay the demand for and development of additional supplies. d. Provide incentives to encourage efficient water use and conservation. e. Include water conservation and efficiency in the review of proposed new or increased uses. f. Promote investment in and maintenance of efficient water infrastructure and green infrastructure.
3. Improve monitoring and standardize data	<ol style="list-style-type: none"> a. Improve and increase the measurement and evaluation of water conservation and water use efficiency.

Table 1. Objectives (consistent with the Basin-wide Objectives)	
reporting among state and provincial water conservation and efficiency programs.	<ul style="list-style-type: none"> b. Encourage measures to monitor, account and report on water loss. Track and report program progress and effectiveness. c. Monitor and collect information related to the waters of Ontario. d. Collect and report water use information.
4. Develop science, technology and research.	<ul style="list-style-type: none"> a. Encourage the identification and sharing of innovative water, wastewater and stormwater management practices and technologies. b. Encourage research, development and implementation of water conservation and efficiency technologies, services and standards. c. Seek and involve traditional knowledge and practices of Aboriginal people in Ontario. d. Strengthen scientific understanding of the linkages between water resources and use, water conservation practices, and ecological needs and responses. e. Increase understanding of water and its movement including groundwater and its interaction with surface water, and the effects of climate change on water resources.
5. Develop education programs and information sharing for all water users.	<ul style="list-style-type: none"> a. Ensure equitable public access to water conservation and efficiency tools and information. b. Inform, educate and increase awareness regarding the importance of water to life, and the need for conservation and efficient water use. c. Promote the cost-saving aspect of water conservation and efficiency for both short-term and long-term economic sustainability. d. Share conservation and efficiency experiences, including successes and lessons learned. e. Enhance and contribute to regional information sharing. f. Encourage and increase training opportunities in collaboration with professional or other organizations in order to increase water conservation and efficiency practices and technological applications. g. Ensure that conservation programs are transparent and that information is readily available. h. Aid in the development and dissemination of sector-based best management practices and results achieved. i. Seek opportunities for the sharing of traditional knowledge and practices of Aboriginal people.

Appendix A. Index of Ontario's Contributing Water Management and Conservation Statutes, Programs and Policies and Lead Provincial Ministry

Guide programs toward long-term sustainable water use and management including taking ecosystem needs for water into account

1. Ontario Water Resources Act and the Water Taking Regulation	MOE
2. Clean Water Act, 2006	MOE
3. Conservation Authorities Act, 1990	MNR
4. Water Budget Studies	MNR
5. Lakes and Rivers Improvement Act	MNR
6. Endangered Species Act, 2007	MNR
7. Ontario Great Lakes Wetland Conservation Action Plan	MNR
8. Greenbelt Act, 2005 and Greenbelt Plan	MMAH
9. Niagara Escarpment Planning and Development Act and Plan	MNR
10. Ontario's Biodiversity Strategy	MNR
11. Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem	MOE, MNR, OMAFRA
12. Joint Strategic Plan for the Management of Great Lakes Fisheries	MNR

Adopt and implement supply and demand management to promote efficient use and conservation of water resources

13. Water Opportunities and Water Conservation Act, 2010	MOE
14. Financial Plans Regulation under the Safe Drinking Water Act, 2002	MOE
15. Building Code Act, 1992 and the Building Code	MMAH
16. Green Energy Act, 2009	Energy
17. Oak Ridges Moraine Conservation Act, 2001 and Plans	MMAH
18. Places to Grow Act, 2005 and Growth Plan	MOI
19. Lake Simcoe Protection Act, 2008 and Lake Simcoe Protection Plan	MOE
20. Planning Act and Provincial Policy Statement	MMAH
21. Municipal Stormwater Management Systems	MOE
22. Ontario Small Waterworks Assistance Program	MOI

Improve monitoring and standardize data reporting among state and provincial water conservation and efficiency programs

23. Ontario Low Water Response	MNR
24. Ontario Surface Water Monitoring	MNR
25. Groundwater Monitoring Network and Climate Change Project	MOE
26. Water Use Reporting	MOE/MNR
27. Water Resources Information Program	MNR
28. Ecological Framework for Recreational Fisheries Management in Ontario	MNR
29. The Ontario Geological Survey's Groundwater Mapping Program	MNDM
30. Climate Change Modelling and the Weather and Water Information Gateway	MNR

Develop science, technology and research

31. Showcasing Water Innovation Fund	MOE
32. Ontario Clean Water Agency	MOE
33. Innovation Demonstration Fund	MEDI
34. Green Focus on Innovation and Technology	MEDI
35. Ontario Research Fund - Research Excellence Water Round	MEDI
36. Investment Accelerator Fund	MEDI
37. Ontario Ministry of Agriculture, Food and Rural Affairs /University of Guelph Partnership Research Program	OMAFRA
38. New Directions Research Program	OMAFRA
39. Anishinabek/Ontario Fisheries Resource Centre	MNR
40. Climate Ready: Ontario's Adaptation Strategy and Action Plan	MOE

Develop education programs and information sharing for all water users

41. Ontario Drinking Water Stewardship Program	MOE
42. Water Efficiency Labelling	MOE
43. Best Management Practices	OMAFRA
44. Canada-Ontario Environmental Farm Plan Program	OMAFRA
45. Species at Risk Stewardship Fund	MNR
46. Invading Species Awareness Program	MNR
47. Community Fisheries and Wildlife Involvement Program	MNR
48. Eastern Habitat Joint Venture	MNR
49. Ontario Parks Water Conservation Initiatives	MNR

Ontario Ministry Acronyms Legend

Finance – Ministry of Finance
OMAFRA – Ministry of Agriculture, Food and Rural Affairs
Energy – Ministry of Energy
MOI – Ministry of Infrastructure
MMAH – Ministry of Municipal Affairs and Housing
MNR – Ministry of Natural Resources
MOE – Ministry of the Environment
MEDI – Ministry of Economic Development and Innovation
MNDM – Ministry of Northern Development, and Mines
MTO – Ministry of Transportation

Appendix B. Description of Ontario's Contributing Water Management and Conservation Statutes, Programs and Policies

The following programs contribute to achieving Ontario's goals and objectives for water conservation and efficiency. The programs below may link to more than one goal or objective.

GUIDE PROGRAMS TOWARD LONG-TERM SUSTAINABLE WATER USE AND MANAGEMENT INCLUDING TAKING ECOSYSTEM NEEDS FOR WATER INTO ACCOUNT

To achieve this objective, we have a range of adaptive programs and conservation and efficiency strategies that take into account the importance of water to related ecosystems, working with local stakeholders, and improving water demand forecasts, and water budgets.

1. Ontario Water Resources Act and the Water Taking Regulation

Water takings in Ontario are governed by the Ontario Water Resources Act and the Water Taking Regulation (Ontario Regulation 387/04). The purpose of the Ontario Water Resources Act is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being. http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm

The Water Taking Regulation under the Ontario Water Resources Act, outlines matters that the Ministry of the Environment must consider when considering an application for a Permit to Take Water. The Permit to Take Water Program provides for the fair sharing, conservation, and sustainable use of Ontario's waters. Any person taking more than a total of 50,000 litres of water in a day must first obtain a Permit to Take Water. Water taken for domestic uses, watering of livestock or poultry, or firefighting is excepted from the requirement to obtain a permit. http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_040387_e.htm

The regulation of water taking is done in accordance with statute, policies, guidelines and the Permit to Take Water Manual (http://www.ene.gov.on.ca/environment/en/resources/STD01_078778.html). The Water Taking Regulation specifically identifies the relevant matters that must be considered by the ministry when assessing water taking applications, including:

- the need to protect the natural functions of the ecosystem, including the natural variability of water flow or water levels, minimum stream flow, and habitat that depends on water flow or water levels;
- impact on groundwater and surface water quantity and quality;
- issues related to water availability, including low water conditions and the level of existing water use in the watershed;

- whether water conservation measures are being implemented or are proposed to be implemented in the use of water, in accordance with best water management standards and practices for the relevant sector if these are available; and
- demonstrated need for the water (reasonable prospect of use).

New or increased water takings by regulation-specified highly consumptive water users that remove water from “high use watersheds” are either prohibited or constrained during the low-flow period. The regulation-designated high use watersheds are shown on the Summer Low Flow Map and Average Annual Flow Map specified by the regulation.

Applicants for a Permit to Take Water must complete and submit a “Schedule 1 – Implementation of Water Conservation in accordance with Best Management Practices and Standards for the Relevant Sector”.

This Schedule contains a list of water conservation best management measures and practices for applicants. For the measures and practices checked off, applicants are expected to provide specific details about best management practices applied or to be applied and to cite any information used to determine water conservation and efficiency management practices and measures. Using the Schedule, applicants must declare the water conservation measures and practices they are currently implementing or anticipate implementing over the duration of the permit. They must state their goals for reducing the use, loss or waste of water or for increasing the efficiency of water use e.g., litres per day per unit of production or litres per day per capita for the residential sector. Finally, applicants are asked to identify any approval or certification that they have received for implementing water conservation and efficiency measures best management practices e.g. Environmental Farm Plan, Audubon Cooperative Sanctuary Program for Golf Courses.

In 2007, the Ontario government passed the Safeguarding and Sustaining Ontario’s Water Act, which amended the Ontario Water Resources Act to enable implementation of the Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement) and other amendments to the Permit to Take Water program.

(http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_164560.html)

The Ontario Water Resources Act was amended in 2010 to add a regulation-making authority to establish water efficiency standards or requirements for prescribed appliances and products.

2. Clean Water Act, 2006

The purpose of Clean Water Act, 2006 is to protect existing and future sources of drinking water in Ontario in terms of both quality and quantity of water. It is part of the Ontario Government's commitment to ensure the sustainability of clean, safe drinking water for all Ontarians and to implement the recommendations of the Walkerton Inquiry.

The Clean Water Act, 2006 requires that source protection committees be established and that they consist of representation from the municipalities, industries and other stakeholders from the local watershed. The committees are required to assess activities and conditions that pose a risk to the quality and quantity of municipal drinking water sources, and prepare a plan to address these risks (called "drinking water threats" under the Clean Water Act, 2006). This work includes identifying present and future groundwater and surface water municipal supplies, and areas where large regional aquifers are being recharged. A component of the source protection plan is a water budget which involves measuring how much water exists both at surface and below ground, how it moves, and how much water is withdrawn to identify potential water shortages. Part of this process will be looking at the long-term water supply and determining current or future water availability.

If there are significant risks to drinking water quantity, the source protection plan must include policies to address those risks. Such policies may address water conservation and/or water efficiency. Under the Clean Water Act, 2006, source protection committees are provided with a wide range of policy options to deal with threats that have been identified, including prohibiting the threat activity or regulating it through a risk management plan under Part IV, addressing it through a provincial approval where the threat activity is governed by an approval, land use planning tools or non-regulatory approaches such as education and outreach and incentive programs. Some guidance and/or tools may be developed to support decision-making and source protection committees to determine which best management practices in efficient water use and supply would be locally appropriate when creating their source protection plan policies.

Under the Clean Water Act, source protection planning must also consider several federal and provincial Great Lakes agreements, including the Great Lakes Charter and the Great Lakes-St Lawrence River Basin Sustainable Water Resources Agreement.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06c22_e.htm

3. Conservation Authorities Act, 1990

The Conservation Authorities Act is administered by the Ministry of Natural Resources. The Act provides a statutory framework for creating, funding and the operations of conservation authorities; municipalities petition the Province to form or join a conservation authority to be able to participate in shared local resource

management. As public sector organizations, conservation authorities implement programs that serve both the Ministry's and the municipal interests. There are 36 conservation authorities in Ontario today.

The current shared program with the Ministry of Natural Resources for conservation authorities is related to public safety and natural hazard prevention and management. Program activities include flood and erosion control operations, flood forecasting and warning, ice management, regulating development in hazard prone areas and for interfering with a watercourse or wetlands, as well as hazard prevention by input into municipal planning documents. Water based hazard technical information can be developed in shoreline and watershed plans.

Each conservation authority has a provincially-approved 'Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses' made under the Conservation Authorities Act. Conservation authorities regulate development and activities through a permitting process in areas prone to water related hazards (floodplains, shorelines, wetlands, hazardous lands) as set out in the Act and regulations that fall within the authority's jurisdiction. The conservation authority considers the impact of a development on the control of flooding, erosion, dynamic beaches, pollution or the conservation of land and considers permits for activities that may change or interfere with the existing channel of a watercourse or a wetland.

Conservation authorities review municipal plans and site plan applications made under the Planning Act for consistency with the natural hazards policies of the Provincial Policy Statement as a delegated role from the Ministry of Natural Resources.

Additional local resource management programs are determined by the conservation authority boards of directors which are comprised of municipal appointees. These additional programs reflect local needs and the capacity of the conservation authority and may include activities such as stewardship, watershed studies, education and recreation. Conservation authorities may also comment on municipal planning documents according to their own board approved policies as a public body.

By contract or agreement, authorities may provide additional technical advice or other services to municipalities, such as assessment of environmental impacts, hydrogeology services, stormwater management advice, natural heritage advice, septic system reviews, tree planting and other activities.

Conservation authorities may also have responsibilities under other provincial legislation, programs or through agreements with other government agencies. For example, conservation authorities undertake the duties of source protection authorities under the Clean Water Act, 2006; participate in the Ontario Low Water

Response Program; and review applications for impacts to fish habitat under the Fisheries Act through agreements with Fisheries and Oceans Canada.

http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_165435.html

http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_165437.html

4. Water Budget Studies

Under the Clean Water Act, 2006, the Ministry of Environment, Ministry Natural Resources and many other partners are working together on Ontario's source water protection program. The Ministry of Natural Resources, with the conservation authorities and other local partners, are leading the development of water budgets to estimate surface and groundwater supplies, water use, and undertake water quantity risk assessments in support of the development of source protection plans by source protection committees. The Ministries of Environment and Natural Resources work with conservation authorities in their legislated role as source protection authorities to provide technical and administrative support to the source protection committees.

The overall goal of water budgeting is to quantify the various parts of the water cycle, understand the pathways that water takes through a watershed and identify potential stressors within the hydrologic system. Under the Clean Water Act, 2006; further changes in regulation and technical rules are being developed to meet requirements to include climate change assessment. In collaboration with the Ministry of the Environment, the Ministry of Natural Resources is working to ensure that climate change scenarios are included in water budget cumulative impact assessments at the watershed scale. These assessments will consequently support the development of risk management tools and local adaptation efforts in watershed management. All data, information and technologies developed through the Water Budget project will be made available through the Weather and Water Information Gateway under the Regional Adaptation Collaborative.

The Ministry of Natural Resources, working with the Ministry of the Environment and Environment Canada, has produced a guide for the assessment of hydrologic effects of climate change in Ontario. The purpose of the guide is to provide a methodology for conducting assessments of the effects of climate change on water resources in Ontario. This guide supports the Clean Water Act, 2006 and has numerous target users and applications. In addition to the guide, the Ministry of Natural Resources has developed an interactive web-based tool that allows users to select and download standard climate change data sets for use within hydrologic models as outlined in the guide. This web-based tool is functional and available at www.waterbudget.ca
<http://www.waterbudget.ca/climatechangeguide>

5. Lakes and Rivers Improvement Act

The Lakes and Rivers Improvement Act, administered by the Ministry of Natural Resources, provides for the management, preservation and use of Ontario's lakes and rivers and the land under them, the protection of public rights and riparian interests, the management of fish and wildlife dependent on lakes and rivers, protection of natural amenities and the protection of people and property by ensuring that dams and diversions are suitably located, constructed and maintained.

Dams and water diversions (e.g. for hydroelectric power production) are also regulated through the Lakes and Rivers Improvement Act, which regulates works forwarding, holding back or diverting water and is administered through the Ministry of Natural Resources. Lakes and Rivers Improvement Act approvals govern how dams are managed including water levels and flows and levels as they are affected by the operation of waterpower generating facilities and water control structures to protect the public from floods and other hazards, while supporting flows, ecosystem health, drinking water supply, hydro-electricity generation, navigation for commercial and recreational purposes, agricultural irrigation, and municipal, commercial and industrial use.

When a Permit to Take Water is required from the Ministry of the Environment for the water taking associated with a dam or diversion, the Ministry of the Environment collaborates with the Ministry of Natural Resources to harmonize the requirements imposed on dam or diversion operators by the approvals and permits issued by the ministries.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90l03_e.htm
http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_165453.html

6. Endangered Species Act

With the passage of the Endangered Species Act in 2007, Ontario became a North American leader in protection and recovery for the province's more than 200 species at risk and their habitats. Many species at risk and their habitat in the Great Lakes Basin are now legally protected under the Act. Some of these protected species, including the Lake Sturgeon and American Eel, have also been the focus of rehabilitation efforts under the 2007-2012 Canada – Ontario Agreement Respecting the Great Lakes Basin Ecosystem.

Key to protecting many species at risk is protecting and restoring their aquatic habitat and water-based features. Conserving water to supply habitat and other water needs for species at risk will further support their recovery. For example, the recovery of both fish species identified above would be enhanced by permitting upstream and downstream passage around water control and hydro-power structures, both of which can be used to alter inflows and outflows of water to lakes, rivers and wetlands.

Under the Act, a recovery strategy is developed for each species listed as either Endangered or Threatened on the Species at Risk in Ontario (SARO) list. A recovery strategy provides the Ontario government with the best available scientific information on a species and advice regarding its protection and recovery. The government then outlines the actions it plans to take in response to this advice in a government response statement. Recovery strategies and government response statements are available to the public through Ontario's Environmental Registry and the Ministry of Natural Resources home page.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm
<http://www.mnr.gov.on.ca/en/Business/Species/index.html>

7. Ontario Great Lakes Wetland Conservation Action Plan

The Great Lakes Wetland Conservation Action Plan was crafted in 1994 so government and environmental organization partners could work together more effectively to conserve remaining Great Lakes Basin wetlands. The Great Lakes Wetland Conservation Action Plan is the implementation mechanism for the *25-year Strategic Plan for Wetlands of the Great Lakes Basin*. It complements federal and provincial policy and supports intergovernmental efforts including the binational Canada-United States Great Lakes Water Quality Agreement, draft Provincial Policy Statement, Ontario Biodiversity Strategy, Ontario's Draft Great Lakes Strategy and the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem. A team of environmental organizations and government representatives, including Ministry of Natural Resources' wetland conservation stewardship interests, coordinates the delivery of the Great Lakes Wetland Conservation Action Plan.

The Ministry of Natural Resources, on behalf of Ontario, also supports international efforts to conserve and manage Great Lakes coastal wetlands through its participation in the Great Lakes Commission's Wetlands Consortium and its support of the International Joint Commission's Upper Great Lakes and Lake Ontario-St. Lawrence River water level studies.

http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STDPROD_068924.html

8. Greenbelt Act, 2005 and Greenbelt Plan

The Greenbelt Act, 2005 provides the legislative framework for the development and implementation of the Greenbelt Plan. The Act sets out the objectives of the Greenbelt Plan including protection of the land base needed to maintain, restore and improve the ecological and hydrological functions of the Greenbelt Area. The Greenbelt Act requires all decisions under the Planning Act and Condominium Act to conform with the Greenbelt Plan and that municipalities bring their official plans into conformity with the Greenbelt Plan at the time of their next 5 year official plan review.

The Greenbelt Plan requires municipalities to provide for a comprehensive, integrated and long-term approach to managing water resource systems. It identifies a Natural Heritage System in Schedule 4 as a guiding framework to help reach this goal. It also contains a listing of key natural heritage and key hydrological features which are to be identified and protected from development and site alteration, along with appropriate buffers.

The Greenbelt Plan area contains numerous watersheds, subwatersheds and groundwater resources, including the network of tributaries that support the major river systems identified in the Plan. These resources are critical to the long-term health and sustainability of water resources and biodiversity and overall ecological integrity.

Key policies which ensure the protection of water resources in the Greenbelt include those related to: the need to use watershed plans and watershed management approaches to guide development; the consideration of cross-jurisdictional or cross-watershed impacts; and the protection of source water in accordance with provincial direction. The plan also contains policies that restrict the planning and provision of infrastructure in order to help protect the water resources systems, including key natural heritage and key hydrologic features.
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_05g01_e.htm
<http://www.mah.gov.on.ca/Page189.aspx>

9. Niagara Escarpment Planning and Development Act and Niagara Escarpment Plan

The Niagara Escarpment Planning and Development Act sets out the legislative framework for the Niagara Escarpment Plan and the oversight body, the Niagara Escarpment Commission.

The Niagara Escarpment Plan provides a framework for protection, conservation, and sustainable development to ensure that the Escarpment will remain substantially as a continuous natural environment for future generations.

The plan contains maps which identify land use designations, including Escarpment Natural and Protection Areas and includes policies that guide planning and development in order to help protect the water resources. The plan ensures that new development affecting streams, watercourses, lakes, wetlands, and groundwater systems will have minimum individual and cumulative effect on water quality and quantity, and on the Escarpment environment.
<http://www.escarpment.org/landplanning/plan/index.php>
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90n02_e.htm

10. Ontario's Biodiversity Strategy

Ontario launched its strategy to protect biodiversity across the province in 2005. The Ontario Biodiversity Council, a multi-stakeholder group with members from the

conservation and environmental community, business and industry, the Minister of Natural Resources, aboriginal organisations and others, guides implementation of the strategy and also reports to the public on progress. In 2011, Council led the process of reviewing and updating the strategy resulting in Ontario's Biodiversity Strategy, 2011. The new strategy includes actions to reduce threats and enhance the resilience of the Great Lakes. Actions include reducing pollution and preventing the introduction and spread of invasive species, implementing legislation to better protect species at risk and their habitats, completing a system of protected areas representative of Ontario's ecosystems, and encouraging private land and water resources stewardship.

On an international scale, Ontario participates in efforts to conserve the diversity of species and ecosystems of the Great Lakes Basin through binational projects such as The Great Lakes Conservation Blueprint for Terrestrial and Aquatic Biodiversity, *The Sweetwater Sea: An International Biodiversity Conservation Strategy for Lake Huron* and the first Great Lakes-wide international assessment of island biodiversity, *Islands of Life: A Biodiversity and Conservation Atlas of Great Lakes Islands*.

http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STEL02_166816.html

11. Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem

The Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (Canada-Ontario Agreement) is the framework through which the Canadian federal government and the Province of Ontario work cooperatively to restore, protect and conserve the Great Lakes Basin Ecosystem. Under the Canada-Ontario Agreement, Ontario works with Canada and other partners to deliver on Great Lakes priorities, and helps Canada meet its commitments under the Canada-U.S. Great Lakes Water Quality Agreement.

The most recent Canada-Ontario Agreement was signed in 2007 and linked aquatic ecosystem health, water conservation, and sustainable water use. Through this Agreement, Ontario and Canada committed to fostering sustainable water use and conservation consistent with the intent of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement.

The 2007 Canada-Ontario Agreement expired on June 24, 2012. Canada and Ontario have begun negotiations on a new Canada-Ontario Agreement and expect to consult on a proposed Canada-Ontario Agreement in 2013.

Canada and Ontario in collaboration with other partners have undertaken over 1,000 projects under the 2007 Canada-Ontario Agreement.

The Canada-Ontario Agreement Memorandum of Cooperation outlines areas of collaboration between the Ministry of the Environment, Ministry of Natural Resources and Ministry of Agriculture, Food and Rural Affairs on behalf of Ontario

and the Great Lakes-St. Lawrence Cities Initiative in support of the 2007 Canada-Ontario Agreement. In June 2012, the ministers and mayors renewed the Memorandum of Cooperation for two years in order to discuss Great Lakes priorities, including beaches and coastal health, benefits of Great Lakes investments and projects on integrated stormwater management and combined sewer overflows and bypasses. The Province will consider municipal concerns when negotiating a new Canada-Ontario Agreement with the federal government.

In June 2010, the “Water Conservation and Efficiency Market Transformation Study” was released in support of two Canada-Ontario Agreement commitments:

- Annex 3 Result 1.3 d) “foster sustainable water use and conservation consistent with the intent of the Great Lakes St. Lawrence River Basin Sustainable Water Resources Agreement;” and
- Annex 3 Result 1.2 d) “Improve public awareness and access to programs that support beneficial practices and stewardship activities.”

http://www.mnr.gov.on.ca/en/Business/GreatLakes/2ColumnSubPage/STEL02_173911.html

<http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1>

http://www.ene.gov.on.ca/environment/en/subject/great_lakes/STDPROD_096902.html

12. Joint Strategic Plan for the Management of Great Lakes Fisheries

The *Joint Strategic Plan for Management of Great Lakes Fisheries* is a world-renowned model for ensuring that Canada and the U.S. agree on how best to manage and sustain common Great Lakes fish stocks. The Great Lakes Fishery Commission, a secretariat that coordinates fisheries management and research on the Great Lakes, coordinates implementation of this historic plan, originating in the 1950s and last revised in 1997. The Ministry of Natural Resources represents Ontario on four out of five Great Lakes Fishery Commission lake committees and on the Council of Lake Committees. The lake committees are responsible for developing fish-community goals and objectives for each Great Lake, as well as plans for managing, preserving and restoring Great Lakes fish species and their habitats.

The Joint Strategic Plan makes a clear connection between fish habitat, water quality and water uses. The plan highlights impacts on fish during spawning and the potential for large-scale diversions to impact fish. Thus, the plan clearly identifies a need to ensure the conflicting goals of users take into account impacts on fish, an important aquatic resource.

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OBJECTIVE 2: ADOPT AND IMPLEMENT SUPPLY AND DEMAND MANAGEMENT TO PROMOTE EFFICIENT USE AND CONSERVATION OF WATER RESOURCES

To achieve this objective, we have a range of programs that manage water supply and demand to achieve efficient use and conservation of water resources — including promoting innovative water technologies, green infrastructure and water use efficiency.

13. Water Opportunities and Water Conservation Act, 2010

On November 29th, 2010 Ontario's Legislature passed the Water Opportunities and Water Conservation Act, 2010. The Act contains five schedules. Schedule 1 enacts a stand-alone act, the Water Opportunities Act, 2010 (see below for details). Schedules 2 to 5 amend existing legislation in respect of water conservation and other matters. The Act builds upon Ontario's expertise in clean water technology and sets out a framework to make the province a North American leader in water innovation to help address global water challenges. Among other things, the Act sets the framework to encourage Ontarians to use water more efficiently by creating and implementing innovative approaches to protect water resources for current and future generations.

Schedule 1 of the Act introduced the Water Opportunities Act, 2010 which created the Water Technology Acceleration Project, a non-crown corporation to encourage collaboration and coordination between industry, governments and academia. The Water Technology Acceleration Project will assist in facilitating the creation and growth of globally competitive companies and high-value jobs in the water and wastewater sector.

- The Water Opportunities Act, 2010 also includes authority to require municipalities and other municipal service providers to prepare municipal water sustainability plans that would include an asset management plan, a financial plan, a water conservation plan, strategies for maintaining and improving the service, a risk assessment and other prescribed information; authority to require prescribed information on or with municipal water bills to promote transparency; authority to set aspirational targets for water conservation and other matters; and authority to require public agencies to prepare water conservation plans. This includes authority to require public agencies to achieve water conservation targets and consider technologies, services and practices that promote the efficient use of water when making capital investments or purchasing goods and services.

The Act also amended the Ontario Water Resources Act to enable regulations for water efficiency standards or requirements for prescribed appliances and products. No person would be permitted to offer for sale, sell or lease a prescribed appliance or product unless it meets the water efficiency standard or requirement set out in

the regulations. These are tools that will enable Ontarians to use water more efficiently to conserve and protect water resources.

The Act also amended the Building Code Act, 1992. These changes require the Minister of Municipal Affairs to initiate reviews of the Building Code with reference to standards for water conservation every five years, rename the Building Code Energy Advisory Council to the Building Code Conservation Advisory Council, and expand the mandate of this council to include advising the Minister on the Building Code with reference to standards for water conservation.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_10w19_e.htm
http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&Intranet=&BillID=2362

14. Financial Plans Regulation under the Safe Drinking Water Act, 2002

As part of the province's commitment to implement all of Justice O'Connor's Walkerton recommendations, the Ministry of the Environment put in place a new licensing framework under the Safe Drinking Water Act for municipal residential drinking-water systems – the Municipal Drinking-Water License Program. Financial plans are one of the elements which must be put in place for a license to be issued.

A Financial Plans Regulation and Financial Plans Guidance Document were prepared and put into effect by the Province in 2007. The Regulation outlines requirements set out by the Minister of the Environment for financial plans that are required to obtain a license under the Safe Drinking Water Act. Taken together, the Financial Plans Regulation and Guideline are a key step in the province's long term strategy to ensure the financial sustainability of municipal drinking water and wastewater systems.

http://www.e-laws.gov.on.ca/html/source/regs/english/2007/elaws_src_regs_r07453_e.htm
http://www.ene.gov.on.ca/envision/env_reg/er/documents/2007/Financial%20Plan%20Guideline%20-%20Aug%2015.pdf

15. Building Code Act, 1992 and the Building Code

Ontario's Building Code is a regulation under the Building Code Act, 1992 that sets out technical and administrative requirements that must be met when a building is constructed, renovated or undergoes a change of use. Plumbing requirements are included in the Building Code. Provisions that support water efficiency (e.g., through mandating low-flow toilets in new construction and additional bathrooms added to existing buildings) were added to the Building Code in 1996 to improve water efficiency in any new construction/renovation that occurs.

The 2006 edition of the Building Code introduced an "objective-based" format, which links Code requirements to underlying objectives. Resource Conservation is one category of objectives and includes water conservation. This provides designers with a choice in how they conserve water: the designers can either

follow the prescriptive requirements of the Code or they can propose an alternative solution to meet the water conservation objectives of the prescriptive requirements. The 2006 Building Code also clarified that certain uses of rainwater and greywater were permissible, thereby increasing certainty in the building industry about the uses of these green technologies.

In December 2009, the Building Code was amended to, among other things, eliminate the Code's exemptions that allowed for the installation of 13 litre toilets in certain renovations and some building uses. Effective January 1, 2011, the Building Code will only allow for the installation of toilets with a maximum flush cycle of 6 litres or less.

On November 7, 2012 the Ontario government announced the filing of a new edition of the Building Code. It includes enhancements to the water conservation requirements for toilets, urinals, showerheads and also expands the permitted uses for rainwater and grey water reuse which take effect January 1, 2014.
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_92b23_e.htm
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_120332_e.htm

16. Green Energy Act, 2009

On May 14, 2009 the Ontario government passed the Green Energy Act to attract new investment, create new green economy jobs and better protect the environment. Amendments in 2010 expanded the guiding principles for the Government of Ontario to consider when constructing, acquiring, operating and managing government facilities. The guiding principles now include:

- Reporting on water use associated with government facilities;
- Ensuring water efficiency is considered in planning and designing government facilities; and
- Using technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_09g12_e.htm

17. Oak Ridges Moraine Conservation Act, 2001 and Oak Ridges Moraine Conservation Plan

The Oak Ridges Moraine Conservation Act, 2001 provides the legislative framework for the development and implementation of the Oak Ridges Moraine Conservation Plan.

The Oak Ridges Moraine Conservation Plan provides a long-term framework of designations and policies and requires that municipalities further implement these directions through their official plans and zoning by-laws. It identifies a Natural Heritage System comprised of Cores and Linkage Areas and goes on to define key natural heritage and hydrological features which are to be identified and protected in municipal planning documents. It also provides mapping of landform conservation areas and highly vulnerable aquifer areas, requires subwatershed

planning and the preparation of water conservation plans and water budgets, and requires the identification of municipal well-head protection areas and restricts certain types of stormwater management facilities in order to protect the ground water resources in the Moraine's aquifers – which provide drinking water for over 250,000 people and provide the baseflow for the vast majority of streams running north and south off the Moraine – the regional groundwater divide for central Ontario.

The Oak Ridges Moraine Conservation Plan requires that every upper-tier municipality and single-tier municipality within the designated moraine area begin to prepare a water budget and conservation plan for every watershed whose streams originate within the municipality's area of jurisdiction. It also, as of April 2007, prohibits major development unless the water budget and conservation plan is completed and demonstrates that the water supply required for the major development is sustainable.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_01o31_e.htm

<http://www.mah.gov.on.ca/AssetFactory.aspx?did=1779>

<http://www.mah.gov.on.ca/Page4808.aspx>

18. Places to Grow Act, 2005 and Growth Plans

The Places to Grow Act, 2005, provides the legislative framework for the development and implementation of growth plans for any part of the province. The Act clearly establishes the provincial interest in coordinated regional growth management and infrastructure investment. It sets a broad scope for growth plans, allowing for province-wide relevance and application, and gives growth plans status. The Act requires that all decisions under the Planning Act and Condominium Act, 1998 must conform to a growth plan and that municipal official plans be brought into conformity within three years of the effective date of a growth plan.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_05p13_e.htm

The Growth Plan for the Greater Golden Horseshoe area was the first plan developed under the Places to Grow Act, 2005, and came into effect in June 2006.

Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe, 2006 represents the province's long-term vision for managing the rapid growth that is forecast for this region to 2031. The Plan contains policies that call for more compact and complete communities, require co-ordination between infrastructure investment and land-use planning and support the development of a culture of conservation.

The Growth Plan includes water conservation policies. These policies require that the construction of new, or expansion of existing, municipal or private communal water and wastewater systems should only be considered when:

- strategies for water conservation and other water demand management initiatives are being implemented;

- plans for expansion or for new services are to serve growth in a manner that supports achievement of the intensification and density targets; and,
- plans have been considered in the context of applicable Great Lakes Basin Agreements.

Municipalities are also required to develop and implement official plan policies and other strategies in support of conservation objectives: water conservation, including water demand management, for the efficient use of water, and water recycling to maximize the reuse and recycling of water.

https://www.placestogrow.ca/index.php?option=com_content&task=view&id=9&Itemid=14

Growth Plan for Northern Ontario

In March 2011, the Ministry of Infrastructure released the Growth Plan for Northern Ontario, a 25-year plan to guide decisions and investments to build a globally competitive northern economy that is resilient and sustainable. The Plan includes a chapter on the environment which sets out policies to encourage municipalities to contribute to the protection of surface water and ground water features.

Additionally, Northern economic and service hubs are to identify environmental sustainability objectives and develop policies and programs to achieve water conservation.

https://www.placestogrow.ca/index.php?option=com_content&task=view&id=53&Itemid=65

19. Lake Simcoe Protection Act, 2008 and Lake Simcoe Protection Plan

The Lake Simcoe Protection Act, 2008 provides the legislative framework for the development and implementation of the Lake Simcoe Protection Plan.

On June 2, 2009 the government released the Lake Simcoe Protection Plan to address environmental protection of the watershed. Drawing on expert advice from scientists, the plan sets a new standard for environmental protection in the province and provides a road map to help restore and protect the health of Lake Simcoe.

Among other things, the Plan promotes greater efforts to conserve and use water more efficiently in order to maintain future demands for water within sustainable limits. To monitor progress in achieving the water quantity-related objectives of the Plan, the indicators of environmental health relating to water quantity include effective water conservation and efficiency plans (e.g., as measured through reductions in peak water demand, reduced water use per capita, progress in achieving municipal targets).

The Plan contains the following policies, among others, to promote greater efforts to conserve and use water more efficiently throughout the Lake Simcoe watershed:

- Within five years of the date the Plan comes into effect, municipalities of Barrie, Orillia, New Tecumseth, Bradford West Gwillimbury, Innisfil, Oro-Medonte and Ramara will prepare and begin implementation of a water conservation and efficiency plan that includes targets for water conservation and/or efficiency with associated timeframes, water conservation measures, incentives and means to promote conservation, cost/benefit analyses, required measures, an implementation plan, and monitoring and reporting;
- The Ministry of Agriculture, Food and Rural Affairs, in cooperation with key stakeholders, will assist and encourage water conservation and efficiency efforts in the agricultural community through stewardship programs aimed at promoting the adoption of best management practices;
- The Ministry of the Environment will work with other water use sectors in the Lake Simcoe watershed to encourage the development and implementation of water conservation and efficient use practices for their sector; and
- An application to establish or expand a major recreational use shall be accompanied by a recreational water use plan that demonstrates the reduction in water use or use of water conservation technologies.

The plan also requires the Ministries of Environment and Natural Resources to develop in-stream flow targets for water quantity stressed subwatersheds, in collaboration with the local conservation authority. The targets will consider the potential impacts of climate change and will be used to inform future strategies related to water taking.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_08l23_e.htm

<http://www.ene.gov.on.ca/en/water/lakesimcoe/index.php>

20. Planning Act and Provincial Policy Statement

The Planning Act provides the legislative basis for the land use planning system in Ontario. Municipalities are the main implementers of provincial land use planning policies through their official plans and zoning by-laws and their decisions on planning applications. Their decisions and plans are required by the Planning Act to conform (or not conflict) with provincial plans and to be consistent with policies in the Provincial Policy Statement. A variety of other legislation may also apply when municipalities are making decisions on applications or when creating their planning documents.

The Planning Act contains the process requirements for public notice and consultation rules governing municipal processing of land use proposals or documents and the framework for appeals to the Ontario Municipal Board. The planning process provides an opportunity for an inter-disciplinary assessment of all related matters pertaining to land use, including the integration of water-related considerations.

Issued under the authority of section 3 of the Planning Act, the Provincial Policy Statement provides policy direction on matters relating to land use planning that

are of provincial interest. For example, policy 1.6.4.1 of the Provincial Policy Statement states that planning for water and sewage services shall promote water conservation and water use efficiency. In addition, policy 2.2.1 states that planning authorities shall protect, improve or restore the quality and quantity of water by, among other things, “promoting efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality” and using the watershed as the ecologically meaningful scale for planning. It calls for planning authorities to identify the ground and surface water features and functions necessary for ecological and hydrological integrity of the watershed and maintain linkages among hydrologically connected water based and/or terrestrial based features.

The Ministry of Municipal Affairs and Housing, working in collaboration with relevant ministries, has undertaken a comprehensive review of the Provincial Policy Statement and released a draft provincial policy statement for comment.

<http://www.mah.gov.on.ca/AssetFactory.aspx?did=9881>

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90p13_e.htm)

21. Municipal Stormwater Management Systems

The Ministry of the Environment has created several documents for municipalities, community groups, businesses and anyone who is interested in managing stormwater and reducing pollution at its source.

http://www.ene.gov.on.ca/environment/en/subject/stormwater_management/STDP ROD_076045.html

In 2010, the Ministry of the Environment completed a review of the need for a new policy, act or regulation to deal with municipal stormwater management systems in Ontario municipalities in light of climate change. The review identified a need for a stormwater management policy framework, with emphasis on improving stormwater management at the source through reuse and low impact development practices. Further, increased collaboration for source control practices is needed between all partners including residents, businesses, conservation authorities and all levels of governments.

The ministry is collaborating with several partners on three case study projects on innovative stormwater management practices.

22. Ontario Small Waterworks Assistance Program

The Ontario Small Waterworks Assistance Program began in August 2007 to provide operating and capital assistance to municipalities and Local Services Boards that provide drinking water services to 5,000 and fewer residents. Through the first two phases of the program, \$20 million in operating assistance is being provided to 166 communities.

On August 16, 2010, the government launched the third phase of the Ontario Small Waterworks Assistance Program to provide capital funding over four years to help small communities that own residential drinking water or wastewater systems improve water conservation and efficiency. Examples of possible projects that could be funded include fixing leaking pipes and installing water meters. In May 2011, \$40.9 million was committed to 85 communities under the Ontario Small Waterworks Assistance Program.

<http://www.moi.gov.on.ca/en/infrastructure/sectors/oswap.asp>

Funding from the Ontario Small Waterworks Assistance Program is part of the Province's overall investment in municipal water infrastructure. Since 2003, the Province has committed approximately \$1.8 billion to municipal water, wastewater and stormwater projects.

<http://www.mri.gov.on.ca/english/programs/OWI-award.asp>

OBJECTIVE 3: IMPROVE MONITORING AND STANDARDIZE DATA REPORTING AMONG STATE AND PROVINCIAL WATER CONSERVATION AND EFFICIENCY PROGRAMS

To achieve this objective, we have a range of programs that improve monitoring of water supply, use and conservation/ efficiency and standardizing data reporting among state and provinces.

23. Ontario Low Water Response

The Ontario Low Water Response program provides a framework to coordinate and support local response in the event of a drought. The Ministry of Natural Resources maintains the provincial monitoring network, analyzes data to provide early warnings, and coordinates provincial drought response. The Ontario Low Water Response program consists of a tiered system whereby the level of low water conditions will indicate the placement of the watershed in either a Level I, II or III Low Water Condition. Local Water Response Teams may be required to outline contingency measures that will be adopted within the watershed to achieve water use reduction targets of 10-20%. Water permit holders may be contacted to help achieve water reduction targets. Varying levels of conservation are required depending on the low water level that has been declared.

http://www.mnr.gov.on.ca/en/Business/Water/Publication/MNR_E002322P.html

24. Ontario Surface Water Monitoring

Ontario collects, monitors and analyzes water flows, levels and climate data to identify areas throughout the province where a potential risk of flood or drought may exist.

http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_164544.html

25. Groundwater Monitoring Network and Climate Change Project

Ontario's Provincial Groundwater Monitoring Network (Ministry of the Environment) monitors ambient groundwater quantity and quality conditions in the province through a network of monitoring wells. Information provides an indicator of aquifer conditions and supports water-taking, drought management, land use planning decisions, and water budget and cumulative impact studies.

http://www.ene.gov.on.ca/environment/en/resources/STD01_076357.html

26. Water Use Reporting

By regulation, every holder of a Permit to Take Water is required to report daily water use for each calendar year prior to March 31 of the following year. These data are used to inform the broad water management programs for the province.

Provincial reporting of withdrawals, consumptive uses and diversions to the Great Lakes Commission's Regional Water Use Database is coordinated by the Ontario Ministry of Natural Resources.

<http://www.glc.org/wateruse/database/>

27. Water Resources Information Program

The Water Resources Information Program works to ensure information about Ontario's water resources is available to provincial ministries, municipalities, conservation authorities and others to create maps, conduct geographic analysis and support decisions about the province's water resources. One product of this program is updated watershed boundary mapping that can support the implementation of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement.

<http://www.mnr.gov.on.ca/en/Business/WRIP/index.html>

28. Ecological Framework for Recreational Fisheries Management in Ontario

Even with its abundant resources, Ontario's fisheries are in high demand by sport fishing and tourist industries, as well as commercial fisheries. Ontario's Fisheries Management Zones have been established to protect and maintain Ontario's high quality fishing opportunities. To enhance public involvement and decision-making in managing and ensuring the sustainability of its recreational fisheries resources, Ontario created complementary Fisheries Management Zone Advisory Councils for each zone. Each of Ontario's four Great Lakes is assigned a council, with a council assigned specifically to the Fisheries Management Zone that encompasses Georgian Bay as well.

In support of the Ecological Framework, the Ministry of Natural Resources implemented a broad-scale monitoring program for inland lakes. The broad-scale monitoring program is a long-term effort to monitor the health of Ontario's lakes and their fisheries. The goals of the program are to: describe the distribution of

aquatic resources in Ontario lakes; identify stresses on these resources; track trends in indicators of the health of Ontario's fisheries, lake ecosystems and aquatic biodiversity; and assess and report on the status of fisheries in Ontario. A wide range of variables are monitored: fish are netted to determine abundance, sex, length and weight, and to test for contaminants; temperature/oxygen and water quality is analyzed; invasive species are documented; and fishing effort is estimated.

Intensive monitoring occurs on each of the Great Lakes to provide information on the fish communities and fisheries they support. These monitoring programs inform the development of lake-specific Fish Community Objectives and are used to establish allowable harvest levels for fisheries within the lakes.

http://www.mnr.gov.on.ca/en/Business/LetsFish/2ColumnSubPage/STEL02_166745.html

29. The Ontario Geological Survey's Groundwater Mapping Program

The Ontario Geological Survey's groundwater mapping program contributes to water management initiatives, including the development of GIS-based maps / databases, regional (3-D) aquifer mapping, watershed characterization, thematic studies, regional groundwater sampling, method/protocol and product development.

<http://www.mndm.gov.on.ca/en/mines-and-minerals/geoscience/groundwater>

30. Climate Change Modelling and the Weather and Water Information Gateway

An integrated one-window information gateway of water resource and weather monitoring data known as the Weather and Water Information Gateway, is a flexible, scalable and standardized web-based information discovery system based on open standards that provides long-term access to current and future weather, and water resource data and information. The ultimate function is to discover and deliver data, knowledge and tools while supporting the development of local capacity so that decision makers can make more informed risk management decisions.

<http://www.web2.mnr.gov.on.ca/mnr/ccmapbrowser/climate.html>

http://adaptation.nrcan.gc.ca/collab/index_e.php

OBJECTIVE 4: DEVELOP SCIENCE, TECHNOLOGY AND RESEARCH

To achieve this objective, we have a range of programs that encourage science, technology and research to implement the best in water, wastewater and stormwater technology.

31. Showcasing Water Innovation Fund

The \$17 million program launched on April 29, 2011 is funding leading-edge, innovative and cost-effective solutions for managing drinking water, wastewater and stormwater systems in Ontario communities. The program was established to complement the Water Opportunities Act, 2010 by advancing integrated and sustainable water management in Ontario communities. Lessons learned from these innovative projects will be shared across the province.

http://www.ene.gov.on.ca/environment/en/funding/showcasing_water_innovation/index.htm

32. Ontario Clean Water Agency

The Water Opportunities and Water Conservation Act, 2010 allows the Ontario Clean Water Agency to finance and promote the development, testing, demonstration and commercialization of technologies and services for the treatment and management of water, wastewater and stormwater. The Ontario Clean Water Agency is a Crown Agency of the Province of Ontario that provides clean water services to municipalities, First Nations communities, institutions and businesses.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_93c23_e.htm

33. Innovation Demonstration Fund

The Innovation Demonstration Fund administered by the Ministry of Economic Development and Innovation focuses on emerging technologies, including environmental, alternative energy, bio-products, hydrogen and other globally significant technologies. The purpose of the Innovation Demonstration Fund is to support pilot-scale technology demonstrations that will lead to the commercialization of processes and/or products in Ontario that are globally competitive, innovative green technologies. The Innovation Demonstration Fund program announced a special round of funding for water projects that resulted in support being provided to four water technology projects with an investment of \$5.9M.

<http://www.mri.gov.on.ca/english/programs/idf/guidelines.asp>

34. Green Focus on Innovation and Technology

To support newly commercialized innovative green technologies, the province introduced the Green Focus on Innovation and Technology. The initiative allows the Government of Ontario to use its buying power to adopt innovative clean

technologies, products and solutions and showcase the successful solutions to potential customers in local and global markets. Green Focus on Innovation and Technology provides an opportunity for clean technology companies to accelerate their innovative green technologies to the global marketplace.

<http://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/English/GreenFIT>

35. Ontario Research Fund - Research Excellence Water Round

The Ontario Research Fund Research Excellence Water Round promotes research excellence of strategic value to Ontario by supporting new leading-edge, transformative, and internationally significant research in water and wastewater-related technologies. These solutions include water and wastewater-related technologies and marketable processes and methods. The government is investing \$8.8 million to support four water researchers in Hamilton, Toronto, and Waterloo.

<http://www.mri.gov.on.ca/english/programs/orf/re/water/program.asp>

36. Investment Accelerator Fund

The Investment Accelerator Fund helps accelerate the growth of new technology companies (including companies focused on water conservation technologies) being established in Ontario and positions them for further investment by angels and venture capitalists. The Fund invests up to \$500,000 in companies that have the potential to be global leaders in their field and provide sustainable economic benefits to Ontario.

<http://www.mri.gov.on.ca/english/programs/iaf/program.asp>

37. Ontario Ministry of Agriculture, Food and Rural Affairs/University of Guelph Partnership Research Program

The Ontario Ministry of Agriculture, Food and Rural Affairs invests in research in seven theme areas through a partnership with the University of Guelph. The 'Environmental Sustainability' research theme focuses on maintaining the ability of natural resources (soil, air, water and biodiversity) to support and strengthen the agriculture, food and bioproduct sectors, and rural communities. 'Improving water quantity supply and quality' is one of the five research priorities within this research theme, and calls for proposals are issued annually. The principal researchers for these projects are from the University of Guelph, however projects funded through this program bring together collaborative teams from various academic, government, non-government organizations or industry partners. For details please visit:

<http://www.uoguelph.ca/research/omafra/index.shtml>

http://www.uoguelph.ca/research/omafra/Research_themes.shtml

38. New Directions Research Program

The purpose of the New Directions Research Program administered by the Ministry of Agriculture, Food and Rural Affairs is to stimulate the sustainable growth and competitiveness of Ontario's agri-food sector through investment in innovative and high quality research in partnership with industry, rural communities, organizations, other levels of government and research institutions. A water management area of focus will encourage research on water conservation / efficiency, water quality and related energy efficiency in the agriculture and agri-food sectors; development of regional strategies to improve water management; knowledge translation and transfer to improve on-farm water efficiency /quantity and quality; and development or application of effective drainage system technology under changing climatic conditions.

http://www.omafra.gov.on.ca/english/research/new_directions/overview.htm

39. Anishinabek/Ontario Fisheries Resource Centre

The Anishinabek/Ontario Fisheries Resource Centre was established to serve as an independent source of information on fisheries assessment, conservation, and management, promoting the value of both Western science and Aboriginal knowledge of the land and water. In the past six years, the centre has completed over 150 fisheries projects with First Nations and government agencies across the province, including creel surveys, index netting projects, tagging studies, fish habitat inventories, and synthesis of existing fisheries data for the purpose of formulating resource management plans. This type of information contributes to measuring the success of water conservation and fisheries management efforts.

<http://www.aofrc.org/>

40. Climate Ready: Ontario's Adaptation Strategy and Action Plan 2011-2014

Ontario's adaptation strategy and action plan outlines a strategy with a progressive vision, five broad goals and 37 actions to help communities and ecosystems adjust to the realities of a changing climate over four years, to 2014.

The plan's 37 actions to improve Ontario's resilience include:

- Ensuring source protection plans consider integrating climate change adaptation measures into policies to ensure sources of drinking water are sustainable in the future.
- Supporting community outreach efforts through our Community Adaptation Initiative that gives communities the tools and information they need to plan for the future.
- Helping ecosystems and wildlife adapt by updating Ontario's biodiversity strategy.

http://www.ene.gov.on.ca/environment/en/resources/STDPROD_081665.html

http://www.ene.gov.on.ca/environment/en/resources/STDPROD_101104.html

OBJECTIVE 5: DEVELOP EDUCATION PROGRAMS AND INFORMATION SHARING FOR ALL WATER USERS

To achieve this objective, we have a range of education programs and other programs that raise awareness of the importance of water and the value of conservation, efficiency and cost-saving, and to share best management practices.

41. Ontario Drinking Water Stewardship Program

The Ontario Drinking Water Stewardship Program was established under the Clean Water Act, 2006 to provide financial assistance to landowners and others to help protect drinking water. The investment of \$28 million provides funding to conservation authorities and the Ontario Federation of Agriculture to deliver local financial assistance to landowners, farmers and businesses who implemented voluntary measures to help protect municipal drinking water sources. To date the Program has supported the implementation of over 2200 projects across the province, with funding still available through local conservation authorities for projects that help address significant drinking water threats identified through the source protection planning process. For more information please visit www.ontario.ca/cleanwater.

42. Water Efficiency Labelling

The Ontario Ministry of the Environment signed a promotional partnership agreement with the U.S. Environmental Protection Agency to be part of their WaterSense Program, a water efficiency labelling program for products such as showerheads, faucets and toilets. As a promotional partner, Ontario can share information about the program and promote WaterSense. The WaterSense label lets consumers know they are buying products tested and proven to use 20 per cent less water, and will make it easier for Ontarians to make green choices everyday. WaterSense also gives tips for saving water around the house. Ontario-based manufacturers can now get their water efficient products certified and promoted under the program. Retailers, municipalities and other organizations in Ontario can also participate in WaterSense and help promote the label. More information is available at: www.epa.gov/watersense.

43. Best Management Practices

For the agricultural sector, the Ontario Ministry of Agriculture, Food and Rural Affairs provides a number of fact sheets and over 25 guides on best management practices. This series of best practices books offer proven, practical and affordable approaches to conserving soil, water and other natural resources in rural areas. In particular, three books, Irrigation Management, Water Management and Cropland Drainage address, among other things, efficient use of water / water conservation, (e.g., water efficient irrigation systems and staggering irrigation schedules, water quality tile drainage installation, maintenance and outlet protection for erosion control and subsurface drainage whereby water use may be conserved).

For the municipal sector, the Ministry of the Environment provided funding to the Ontario Water Works Association to prepare “Water Efficiency: Best Management Practice” as well as “Outdoor Water Use Reduction Manual” and associated seminars, available at:

http://www.owwa.com/img/content_images/Image/Outdoor%20Water%20Use%20Manual.pdf

44. Canada-Ontario Environmental Farm Plan Program

The Ontario Ministry of Agriculture, Food and Rural Affairs, in partnership with Agriculture and Agri-food Canada, supports the development and delivery of the Canada-Ontario Environmental Farm Plan program. The Environmental Farm Plan is a confidential, voluntary self-assessment farmers undertake to review potential environmental risks associated with their farm operations. Farmers attend an Environmental Farm Plan educational workshop, complete a review of their operation, and develop an individualized Action Plan to address identified concerns. Action Plans may be submitted to a peer review committee and farmers with plans may be eligible to apply for cost-share funding from the associated cost-share program, the Canada-Ontario Farm Stewardship Program. The program is available province-wide to assist producers with implementing environmental projects identified through the Environmental Farm Plan risk assessment process, and supports eligible projects in 27 best management practices categories.

The Environmental Farm Plan promotes water conservation and water efficiency, raising farmers’ awareness of legislative requirements and best practices. The Canada-Ontario Farm Stewardship Program provides cost-share funding to accelerate adoption of environmental improvement projects, including projects that promote sustainable environmental practices related to water use. Funding support for both programs is currently provided by the Ministry of Agriculture, Food and Rural Affairs and Agriculture and Agri-food Canada under the federal-provincial Growing Forward agricultural policy framework agreement. Both programs are delivered locally to farmers by the Ontario Soil and Crop Improvement Association on behalf of government and the Ontario Farm Environmental Coalition.

<http://www.omafr.gov.on.ca/english/environment/efp/efp.htm>

45. Species at Risk Stewardship Fund

The Species at Risk Stewardship Fund is a funding program to encourage and support the recovery and protection of species at risk and their habitats through stewardship activities. Since 2007, Ontario has supported over 600 projects through the fund. The fund is open to individuals and groups across the province including landowners, farmers, Aboriginal peoples, academic and research institutions, conservation organizations, industries, municipalities, and others who undertake eligible protection and recovery activities. Eligible aquatic-related activities could include inventory, monitoring or outreach work around aquatic species at risk, enhancing and protecting aquatic habitat of species at risk or the

development and implementation of Best Management Practices by industry to help avoid or mitigate threats to species such as Lake Sturgeon or American Eel. http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/STEL01_131229.html

46. Invading Species Awareness Program

The province-wide Invading Species Awareness Program has been a joint partnership initiative of the Ministry of Natural Resources and the Ontario Federation Anglers and Hunters since 1992. The program focuses on education and outreach as well as programs designed to monitor the occurrence and distribution of invasive species. The Invading Species Awareness Program has involved over 300 partners.

<http://www.invadingspecies.com/>

<http://www.ontariostewardship.org/>

47. Community Fisheries and Wildlife Involvement Program

The Community Fisheries and Wildlife Involvement Program provides opportunities for Ontarians to participate in hands-on fish and wildlife management and conservation activities. The Community Fisheries and Wildlife Involvement Program funds volunteer projects that benefit fish and wildlife in the province and improve opportunities for outdoor recreation. Over the past 25 years, thousands of volunteers have helped to conserve biodiversity with financial support and technical advice from the Community Fisheries and Wildlife Involvement Program. The program is currently undergoing review to ensure the best use of available funding and to make certain projects funded in the future focus on Ministry of Natural Resources' core business areas.

http://www.mnr.gov.on.ca/en/Business/LetsFish/2ColumnSubPage/STEL02_166030.html

48. Eastern Habitat Joint Venture

Established in 1989, and covering the six eastern-most Canadian provinces, the Eastern Habitat Joint Venture is collaborative partnership focused on implementation of activities that benefit waterfowl and wetlands under the North American Waterfowl Management Plan and all birds and their habitat under the North American Bird Conservation Initiative. The Ontario government has provided support to Eastern Habitat Joint Venture partners in Ontario since 1994. Ontario partners include: the federal and provincial governments, Ducks Unlimited Canada, the Nature Conservancy of Canada and Bird Studies Canada. Since 2006, through a partnership with Ducks Unlimited Canada, the Ontario government invested over \$4 million in wetland securement and restoration projects valued at over \$22 million. These projects resulted in the conservation of over 8,000 hectares of wetland and associated upland and the enhancement of 11,700 hectares of habitat for breeding and migratory birds.

http://www.mnr.gov.on.ca/en/Business/Forests/2ColumnSubPage/STEL02_166335.html
<http://www.ec.gc.ca/pch-hjv/default.asp?lang=En&n=EEE6EDE7-1>

49. Ontario Parks Water Conservation Initiatives

Ontario Parks is responsible for the operations and protection of over 330 parks, covering 8.2 million hectares that attract an average of 10 million visits each year. Over the last few years, Ontario Parks has undertaken a number of initiatives to conserve water use within the park and to more efficiently treat grey water. Initiatives include the use of low-flow fixtures in park washrooms, use of low-power hand dryers, solar hot water assist systems and on-demand water heaters to reduce reliance on hydroelectric power, cold water meters in new buildings to monitor water usage, use of polyethylene piping in water distribution systems to reduce leakage, and a future pilot grey water treatment and reuse system at a comfort station as a potential tool for adaptation to future climate change water resource impacts.

